

FEASIBILITY STUDY

SR 1528 (Crab Creek Road)
from US 64 to SR 1259 (Dupont Road)
Transylvania & Henderson Counties

R-2919

Prepared by
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I. GENERAL DESCRIPTION

This is a feasibility study for the widening and partial realignment of SR 1528 (Crab Creek Road), from US 64 in Transylvania County to SR 1259 (Dupont Road) in Henderson County, a distance of approximately 4.3 miles (See Figures 1 and 2). The recommended typical cross-sections are a two-lane, 24-foot roadway with 8-foot usable shoulders (2 feet paved), and a two-lane, 24-foot roadway with 8-foot usable shoulders (4 feet paved). A 100-foot wide right-of-way with no access control will be required on this project. Estimated cost of the project is \$5,900,000 (\$2,300,000 for right-of-way and \$3,600,000 for construction).

This study is not a detailed planning/environmental investigation. A feasibility study presents recommended cross sections for improvements, general alignments of improvements, and estimated cost of construction and right-of-way. This study attempts to identify any potential environmental, permitting, or other observed issues which deserve consideration in the planning and construction stages. This feasibility study was completed without the benefit of the existing plans.

II. NEED FOR PROJECT

This project was requested by the Transylvania County Board of Commissioners and E. I. Du Pont De Nemours & Company, Inc. SR 1528 (Crab Creek Road) is classified as a major collector on the Statewide Functional Classification System.

The recommended improvements are needed to enhance safety on SR 1528. Poor sight distance and sharp curves throughout the project make it difficult for vehicles to travel at the posted speed of 45 miles per hour. Traffic on SR 1528 consists mainly of commuters and trucks carrying materials to and from the Du Pont Plant located on the east side of SR 1593 approximately 4.2 miles south of the intersection of SR 1259 and SR 1528. Some of the materials are considered hazardous.

In a report to the Economic Development Commission, Transylvania County, and the North Carolina Department of Transportation, the E. I. Du Pont De Nemours & Company, Inc., of Brevard, North Carolina noted that their trucks utilize SR 1528 to get to US 64 from the plant. The trucks experience many problems on SR 1528, including running off the road, inability to stay completely in lanes, and having to slow down to 15 to 20 mph to negotiate the numerous tight curves.

Existing SR 1528 (Crab Creek Road) consists of a two-lane, 22-foot pavement with 4 to 8-foot shoulders, from US 64 to SR 1531 (Little River Church Road). From SR 1531 to SR 1259 (Dupont Road), SR 1528 consists of a two-lane, 18-foot pavement with 4 to 8-foot shoulders. Right-of-way on SR 1528 is 60 feet with no access control.

The north terminal of the project is located at the unsignalized intersection of US 64 and SR 1528 (See Figure 2). At this location, US 64 is a two-lane, 24-foot pavement with 8-foot shoulders. Land use around the intersection is rural residential and commercial.

The south terminal of the project is located at the unsignalized intersection of SR 1528 and SR 1259 (See Figure 2). SR 1259 (Dupont Road) is a two-lane, 36-foot pavement with 6 to 8-foot shoulders at the intersection. Land use around the intersection is rural residential, commercial, and agricultural.

An at-grade Southern Railway crossing is located, approximately 0.2 miles south of the intersection of US 64 on SR 1528 (See Figure 2). Two trains cross daily at an average speed of 30 miles per hour. Currently, this crossing does not have gates or signals. The train exposure rate, a product of the number of trains per day and the design year traffic volume, is 9000.

A portion of this project, from SR 1533 (Everett Road) to SR 1259 (Dupont Road) is part of the "Southern Highlands" bicycle route. Therefore, the North Carolina Bicycle Program has requested that provisions be made to accommodate bicycle traffic.

Bridge number 35 carries SR 1528 over the French Broad River, approximately 0.4 miles south of the intersection of SR 1528 and US 64 (See Figure 2). The sufficiency rating of bridge number 35 is 71.9 out of 100. The bridge is 288 feet long and has a roadway width of 26 feet.

Estimated 1992 Average Daily Traffic (ADT) on the existing SR 1528 is 2900 vehicles per day (vpd). Traffic is estimated to be 5200 vpd in the year 2012. SR 1528 is operating at a level of service (LOS) D and will operate at a LOS E in 2012. With the recommended improvements current traffic on SR 1528 will experience LOS C, and is anticipated to experience a LOS D in the year 2012.

During the period from June 1989 through May 1992 a total of 49 accidents were reported along the studied section of SR 1528. This resulted in an accident rate of 347.4 accidents per 100 million vehicle miles (acc/100mvm), compared to a statewide average of 305.2 acc/100mvm for this type of facility. No fatalities were reported. The most prevalent type of accidents involved vehicles running off the road (47%). Trucks were involved in 24% of the accidents. The recommended improvements are expected to reduce the accident rate.

III. RECOMMENDATIONS

It is recommended that SR 1528 be widened, utilizing a two-lane, 24-foot pavement with 8-foot usable shoulders (2 feet paved) on a 100-foot wide right-of-way, with no access control, from US 64 to SR 1533 (See Figure 2).

From SR 1533 (Everett Road) to SR 1259 (Dupont Road), the recommended typical cross-section is a two-lane, 24-foot pavement with 8-foot usable shoulders (4 feet paved) on a 100-foot wide right-of-way, with no access control (See Figure 2). The 4-foot wide paved shoulders will enhance safety to bicyclists on the "Southern Highlands" bicycle route.

The recommended improvements also include partially realigning a total of approximately 1.9 miles of SR 1528, to reduce the excessive curvature of selected locations. This is particularly necessary to safely accommodate the relatively large number of trucks utilizing this roadway.

At the intersection of US 64 and SR 1528, it is recommended that a left turn lane be added to US 64 and a right turn lane be added to SR 1528. This improvement will improve traffic flow through this intersection. The intersections at the project terminals should be designed to accommodate a WB-50 design vehicle.

The existing bridge roadway width of Bridge Number 35 is 26 feet. The recommended roadway improvements will require widening the bridge roadway width to 28 feet.

Gates and signals will be added at the Southern Railway crossing. The train exposure index does not exceed the 15,000 threshold warranting a grade separation at this crossing.

Total project cost is estimated at:

Right-of-way	\$2,300,000
Construction	\$3,600,000
Project Cost	\$5,900,000

Low utility conflicts are expected.

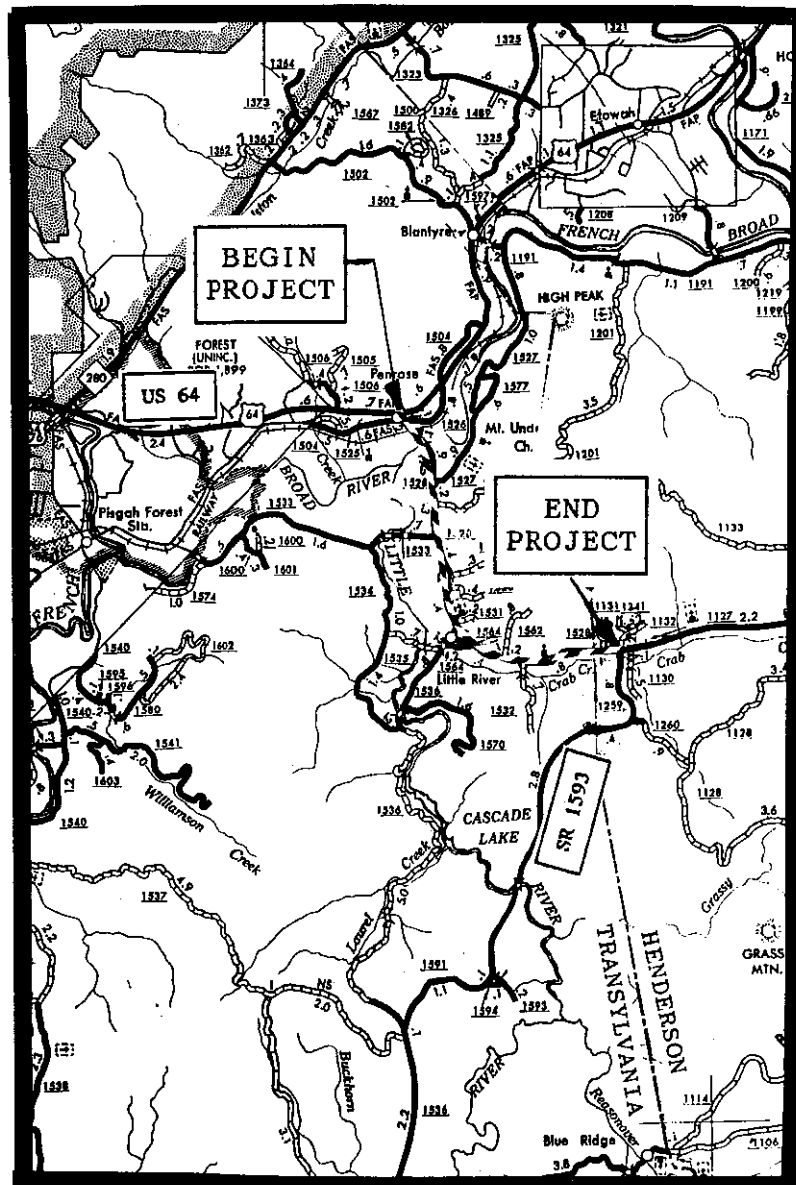
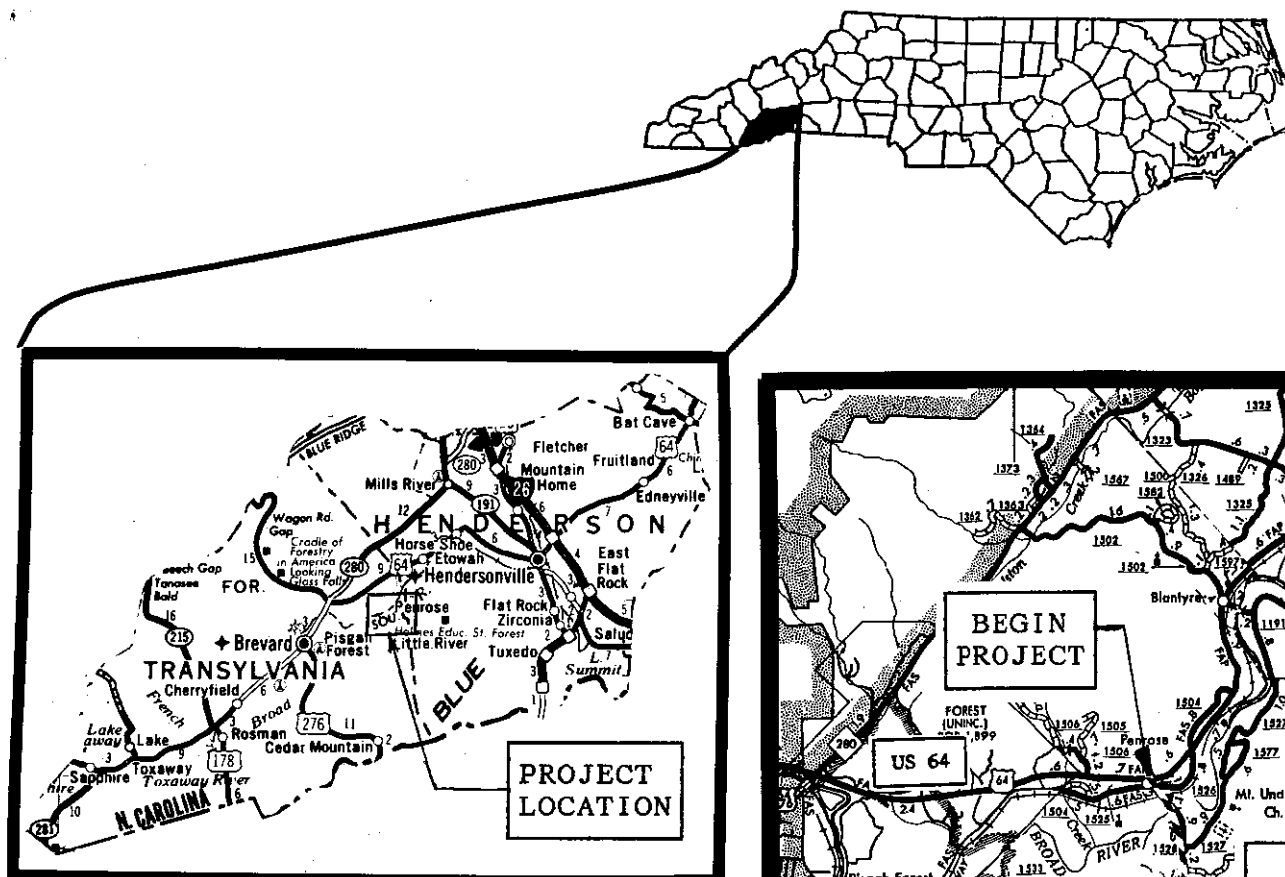
IV. OTHER COMMENTS AND CONCERNS

It is estimated that this project will require the relocation of 10 residences.

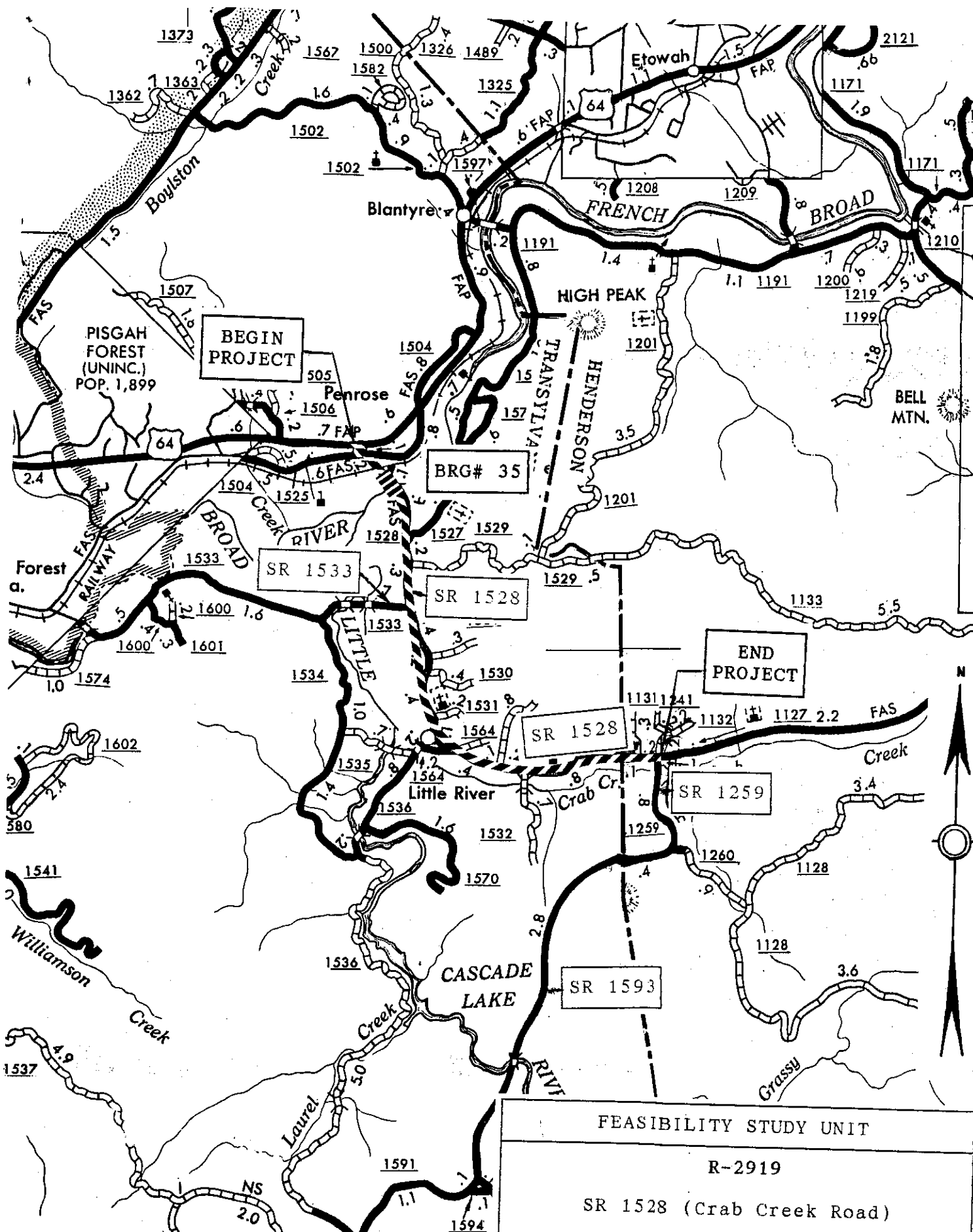
This project may require a Section 404, Corps of Engineers Nationwide Permit. No historical or architectural sites are known to be impacted. No public parks are affected.

A portion of this project is located in a high quality water zone. Crab Creek and a tributary of Little River are classified as trout streams (See Figure 2). Coordination with Tennessee Valley Authority will be required since this project is in a TVA county.

Due to the high number of trucks carrying hazardous waste along this route, pollution spill containment basins should be considered at the approaches to bridge number 35, which carries SR 1528 over the French Broad River.



FEASIBILITY STUDY UNIT	
R-2919	
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DIVISION 14	FIGURE 1



SCALE: 1" = 1 MILE

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DIVISION 14	FIGURE 2